

1. (Currently Amended) A sound system for a vehicle comprising at least one door, said sound system comprising:

a ~~low frequency~~ loudspeaker having a resonant volume formed by a first cavity situated inside of the door and ~~by~~ a second cavity situated outside of the door; and

means for pneumatically coupling ~~said~~the first and second cavities to form ~~said~~the resonant volume.

2. (Currently Amended) The sound system ~~according to~~of claim 1, ~~wherein~~where ~~said~~the means for coupling comprises a first opening in the first cavity and a second opening in the second cavity, ~~said~~the first and second openings being arranged in close proximity to each other when ~~said~~the door is closed.

3. (Currently Amended) The sound system ~~according to~~of claim 2, ~~wherein~~where at least one of the two openings is provided with a sealing lip, which is compressed when the door is closed and seals off the coupling of the two cavities from the outside.

4. (Currently Amended) The sound system ~~according to~~of claim 2, ~~wherein~~where at least one of the two openings is provided over the cross-sectional area with an acoustically neutral cover that is permeable to air.

5. (Currently Amended) The sound system ~~according to~~of claim 1, ~~wherein~~where the two cavities are coupled to one another by a telescopic tube connection.

6. (Currently Amended) The sound system ~~according to~~ of claim 5, ~~wherein~~where the telescopic tube connection has two tubes that can be displaced one inside the other and engage in openings of the cavities.
7. (Currently Amended) The sound system ~~according to~~ of claim 6, ~~wherein~~where at least one of the tubes is connected in an articulated manner to one of the two cavities.
8. (Currently Amended) The sound system ~~according to~~ of claim 17, ~~wherein~~where a partially flexible tube is provided for the articulated connection.
9. (Currently Amended) The sound system ~~according to~~ of claim 1, ~~wherein~~where the two cavities are coupled to one another by a bellows, which connects two openings in the cavities.
10. (Currently Amended) The sound system ~~according to~~ of claim 1, ~~wherein~~where the two cavities are coupled to one another by a flexible hose that connects two openings in the cavities.
11. (Currently Amended) The sound system ~~according to~~ of claim 10, ~~wherein~~where the low-frequency loudspeaker is surrounded by a box defining the first or second cavity.
12. (Currently Amended) The sound system according claim 1, ~~wherein~~where at least one of the cavities is open to the outside of the resonant volume via diffusion openings.

13. (Currently Amended) The sound system according to claim 1, wherein the second cavity includes a volume defined at least by hollow parts of the support frame of the vehicle.

14. (Currently Amended) The sound system ~~according to~~ of claim 13, wherein where the support frame includes an A-pillar of the vehicle.

15. (Currently Amended) The sound system ~~according to~~ of claim 13, wherein where the support frame includes a B-pillar of the vehicle.

16. (Currently Amended) The sound system ~~according to~~ of claim 13, wherein where the support frame includes a sill of the vehicle.

17. (Currently Amended) The sound system according to claim 1, wherein the second cavity includes a volume surrounded by bodywork parts of the vehicle.

18. (Currently Amended) The sound system of ~~according to~~ claim 17, wherein where the low-frequency-loudspeaker is installed in the bodywork parts.

19. (Currently Amended) The sound system of ~~according to~~ claim 1, where in which the low-frequency-loudspeaker is arranged in the door.

20. (Currently Amended) The sound system according to claim 1, wherein the first cavity is pneumatically coupled to a third cavity situated outside the door by further coupling devices.

21. (New) A sound system for a vehicle having at least one door, the sound system comprising:

a loudspeaker having a resonant volume formed by a first cavity situated inside of the door and by a second cavity situated outside of the door, where the second cavity comprises a volume defined within hollow parts of a support frame of the vehicle; and

means for pneumatically coupling the first and second cavities to form the resonant volume.

22. (New) The sound system of claim 21, where the means for pneumatically coupling comprises a bellows.

23. (New) The sound system of claim 21, where the means for pneumatically coupling comprises a telescoping tube connection.

24. (New) The sound system of claim 21, where the means for pneumatically coupling comprises tubing.

25. (New) The sound system of claim 21, where the second volume is located within an A-pillar of the vehicle.

26. (New) The sound system of claim 21, where the second volume is located within an A-pillar and a door sill of the vehicle.

26. (New) The sound system of claim 21, where the second volume is located within an A-pillar, a door sill and a roof support of the vehicle.

27. (New) A sound system for a vehicle having at least one door, the sound system comprising:

a loudspeaker having a resonant volume formed by a first cavity situated inside of the door and by a second cavity situated outside of the door, where the second cavity comprises a volume within the frame of the vehicle; and

means for pneumatically coupling the first and second cavities to form the resonant volume.

28. (New) The sound system of claim 27, where the means for pneumatically coupling comprises a bellows.

30. (New) The sound system of claim 28, where the means for pneumatically coupling comprises a telescoping tube connection.

31. (New) The sound system of claim 28, where the means for pneumatically coupling comprises tubing.

32. (New) The sound system of claim 28, where the second volume is located within an A-pillar of the vehicle.
33. (New) The sound system of claim 28, where the second volume is located within an A-pillar and a door sill of the vehicle.
34. (New) The sound system of claim 28, where the second volume is located within an A-pillar, a door sill and a roof support of the vehicle.

Similarly, the door sills 4 and 5 of Karl are NOT a door. Therefore, a fair and proper reading of Karl indicates that Karl fails to disclose a first cavity in a door as recited in claim 1.

In addition, Karl also fails to disclose first and second cavities that are pneumatically coupled to form a resonant cavity. The Official Action contends that the claimed first cavity reads on the cavity 7 disclosed in Karl, while the claimed second cavity is alleged to read on the passenger compartment of the vehicle (see Official Action, pg. 2). However, such a construction of Karl is based upon an impermissibly broad and technically incorrect interpretation. Specifically, as set forth in the preceding paragraph, Karl fails to disclose a cavity in a door used to form a resonant cavity. The English language translation of Karl clearly states that the cavities 7, 8 are located in the door sill – NOT the door as incorrectly alleged in the Official Action. In addition, the claimed second cavity can not be read onto the vehicle compartment of the vehicle. The claimed second cavity combines with the first cavity to form a resonant volume. A passenger compartment of Karl can not form a resonant volume – a motor vehicle passenger compartment is acoustically considered to be free space. The passenger volume within a car is far too large for a loudspeaker within the vehicle to move air in. Therefore, it is respectfully submitted that reading the claimed second cavity onto the passenger compartment of the vehicle is technically incorrect since the resultant volume would be unable to operate as a resonant volume as recited in claim 1.

A 35 U.S.C. §102 rejection requires a single prior art reference that discloses each feature of the claimed invention. Karl is incapable of anticipating the subject matter of claim 1 since it fails to disclose a first cavity within a door, and a first and second cavity that are pneumatically connected to form a resonant volume.

Independent claims 21 and 27 also recite the feature of the first cavity being located in the door, while the second cavity is located outside the door. Claims 21 and 27 are patentable for at least the same reasons as claim 1

4-5. Claims 5-8, 10-11 and 20 currently stand rejected for allegedly being obvious in view of Karl.

It is respectfully submitted that the rejection of these claims is moot, since each of claims 5-8, 10-11 and 20 depends directly or indirectly from amended claim 1, which is patentable for at least the reasons set forth above.

6. The indication that claim 3 would be allowable if rewritten to no longer depend from a rejected base claim is noted and appreciated.

For all the foregoing reasons, reconsideration and allowance of claims 1-34 is respectfully requested.

If a telephone interview could assist in the prosecution of this application, please call the undersigned attorney.

Respectfully submitted,



Patrick J. O'Shea
Reg. No. 35,305
O'Shea, Getz & Kosakowski, P.C.
1500 Main Street, Suite 912
Springfield, MA 01115
(413) 731-3100, Ext. 102



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the Application of:) Group Art Unit: 2615
Kurt Leipold) Examiner: Lun Lao
)
Title: SOUND SYSTEM FOR A VEHICLE)
)
Serial No.: 10/673,914)
)
Filed: September 29, 2003) Our Docket No. 2000-7297

Springfield, Massachusetts

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

INFORMATION DISCLOSURE STATEMENT

Dear Sir:

Applicant(s) submits herewith Form PTO-1449 identifying patents, publications or other information of which they are aware, which they believe may be material to the examination of this application and in respect of which there may be a duty to disclose.

The filing of this Information Disclosure Statement shall not be construed as a representation that a search has been made (37 CFR 1.97(g)), an admission that the information cited is, or is considered to be, material to patentability, or that no other material information exists.

The filing of this Information Disclosure Statement shall not be construed as an admission against interest in any manner. Notice of January 9, 1992, 1135 O.G. 13-25, at 25.

I hereby certify that this paper (along with any paper referred to as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelope addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Sarah L. Henry
Sarah L. Henry
5/18/07
Date

Application Serial No.: 10/673,914
Docket No. 2000-7297

Under 37 CFR 1.97 (b)

- This Information Disclosure Statement is being filed within three months of the filing date of the application, or the date of entry into the national stage of an international application, or before the mailing date of a first Office Action on the merits, whichever event occurs last, or before the mailing of a first Office Action after the filing of a Request for Continued Examination under § 1.114.

Under 37 CFR 1.97 (c)

- This Information Disclosure Statement is being filed *after* three months of the filing date of this national application, or the date of entry into the national stage as set forth in §1.491 in an international application, or after the mailing date of the first Office Action on the merits, whichever event occurred last, but *before* the mailing date of either a final action under §1.113 or a notice of allowance under §1.311, whichever occurs first.
- A certification as specified in 37 CFR 1.97(e) is set forth below, or
 Fee as set forth in 37 CFR 1.17(p) (\$180.00).

Under 37 CFR 1.97(d)

- This Information Disclosure Statement is being filed *after* a final action under §1.113 or a notice of allowance under §1.311, whichever occurs first, but before, or simultaneously with, the payment of the issue fee. Applicant hereby petitions for the consideration of this Information Disclosure Statement, 37 CFR 1.97(d)(ii). A certification as specified in 37 CFR 1.97(e) is set forth below.
- A certification as specified in 37 CFR 1.97(e) is set forth below, and
 Fee as set forth in 37 CFR 1.17(p) (\$180.00)

CERTIFICATION (37 CFR 1.97(e))

- Each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Statement. A copy of the relevant search report is enclosed herewith.
- No item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing this certification after making reasonable inquiry, no item of information contained in the Information Disclosure Statement was known to any individual designated in §1.56(c) more than three months prior to the filing of this Statement.

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Docket No. 2000-7297

Applicants respectfully request that any deficiencies in the fees be charged to Deposit Order Account No. 50-3381.

Respectfully submitted,

By: Patrick O'Shea
Patrick J. O'Shea
Registration No. 35,305
O'Shea, Getz & Kosakowski, P.C.
1500 Main Street, Suite 912
Springfield, Massachusetts 01115
413-731-3100